

**GLOBAL YOUTH TOBACCO SURVEY  
(GYTS)**

**2003**

**HUNGARY**

**NATIONAL REPORT**

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## **Executive summary**

*Objectives:* This study aims to provide nationally representative data on the smoking prevalence of Hungarian young people. Furthermore it reveals adolescents' knowledge and attitude related to tobacco use, their exposure to media messages on smoking and to environmental tobacco smoke (ETS), the access and availability of tobacco products for minors and the presence of health education on tobacco smoking in the school practice.

*Subjects and Methods:* A school-based nationally and regionally representative survey was administered using two stage cluster sampling method. Thus data of 4484 students aged mainly between 13 and 15 years were used. Data collection was carried out by the use of internationally standardised questionnaire. This survey was conducted within the frame of Global Youth Tobacco Survey (GYTS).

*Results:* More than two-third of students have already experimented with smoking and one-third of them have remained current smokers. There are no significant gender differences in the prevalence data. Every fifth never smokers are susceptible to initiate smoking and this proportion is much higher in the girls (27.9%) than in the boys (15.0). More than one-third of current smokers intend to quit. More than half of the students were not taught about the effects of tobacco use in the school in the last year. High percentage of both never and current smokers are exposed regularly to ETS. About 30-60% of young people have met anti-smoking media messages, whilst about 60-85% of them have met pro-smoking media messages. Considerable percentages of both never and current smokers have positive attitude toward tobacco use. More than three-third of current smokers have never had problem because of their age in buying cigarette.

*Conclusions and Recommendations:* There is an urgent need to reduce smoking prevalences among young people. To achieve this we have a lot to do: to develop effective tobacco control prevention and cessation programs especially for youth, to disseminate existing good programs expansively, to give more information on tobacco use not only for students but also for their environment (e.g. for the family). There is a need for more effective legislation.

## **Introduction**

It is a worldwide known fact that tobacco use causes serious health problems. Nowadays every tenth death among adults is attributable to tobacco use in the world (1). The European Region of WHO, with only 15% of the world's population, faces nearly one third of the worldwide burden of tobacco-correlated diseases. At the end of the 1990s tobacco products were responsible for 1.2 million deaths (14% of all deaths), and unless more effective measures are implemented it is estimated that they will cause 2 million deaths (20% of all deaths) each year by 2020. While it has fallen from 45% to 30% over the past 30 years and has currently stabilized, smoking prevalence in the European Region still remains at a level that is devastating for public health and future generations. The negative trends in smoking prevalence among young people, women and lower socioeconomic groups, as well as the gap in tobacco control policies between Member States, are of a particular concern. A lack of political will and sustainability in tobacco control policies is still characteristic of a large part of the Region (2).

## **Health Effects**

Scientific researches have proved undoubtedly that tobacco use has causal role in the developing of several fatal diseases (3). Tobacco use is responsible for the half of malignant tumours – within this for the 90% of lung cancers – (4), for the 80% of chronic bronchitis-emphysemas (it also exacerbates asthmatic symptoms), for more than half of cardio-vascular diseases (e.g. heart attack, arteriosclerosis) and cerebral vascular diseases (5, 6).

Smoking has unfavourable impact on sexual functioning as well. Decrease of the number of spermiums and damaged viability of the rest (and consequently declined fertility) are detectable in young males (7). Vascular lesions can cause potency disturbance. Embedding of fertilized ovum is embarrassed and respectively the rejection of embedded zygote (early spontaneous abortion) is more frequent in smoking females. All of these follow that tobacco use is responsible for infertility of many females and for many unions of barren issue (8).

Underdevelopment of the foetus caused by the decay of blood circulation in the uterus and the placenta and the low oxygen level of blood is observable in smoking gravidas.

As a consequence it increases the risk for premature birth and/or disability of newborn. Tobacco use during pregnancy also can cause preterm deliveries, low birth weight, and developmental anomalies such as lack of extremities (9).

The harmful effect of environmental smoke (the passive smoking) is also well-known (10, 11). However, early harmful effects of tobacco use (in which young people are concerned too) are less known (12). The efficacy of heart declines following smoking only for few months.

## **Tobacco use in Hungary**

In Hungary one of the most socially accepted health-damaging behaviour is tobacco use, mainly cigarette smoking. This was a big problem in the last decades and in addition it is increasing nowadays. Prevalence of daily smokers is 38,2% among adult males, but it is also high among females: almost every fourth adult woman is a daily smoker (23%) (13). Comparing to the European average prevalence (and to the most countries of this region) these data are extremely high (1). This extensive tobacco use has considerable and serious health outcomes. In Hungary 140 000 people die in each year and 28 000 of them die because of diseases caused by tobacco use (14). Thus smoking has a crucial role in the decrease of Hungarian population, which is considered with reason a national catastrophe.

Another very serious issue is that smoking is usual among young people, too. Moreover they start smoking in younger and younger age (15, 16), which is a world-wide phenomenon (17). Some nationally representative studies showed that in the last years about three-fourth of 15-17 year-old young people reported that they already had tried smoking (18, 19) and almost one-third (32,7%) of them are at least weekly smokers (19). Though prevalences of boys are a little bit higher than those of girls, these differences are small (less than 5%).

## **Tobacco control in Hungary**

### **Legislation**

#### *Media*

The direct advertising of tobacco products is completely banned in national and cable TV-s, national radio, cinemas, local magazines and newspapers, billboards and outdoor walls (there is no restriction for the international newspapers, points of sale and kiosks). There is no restriction for product placement TV and films (indirect advertising).

#### *Accessibility and Distribution of tobacco products*

There are no restrictions for self-service displays, sales of duty free tobacco products, and there is a complete ban for sale of single or unpacked cigarettes, vending machines, and distribution of free samples of cigarettes. Selling of tobacco products to minors (below age of 18) is completely banned.

#### *Smoke free areas in public places*

There is a total smoking ban in civic public transport and international air transport, in indoor workplaces and offices. Smoking is not permitted except in designated areas in health care, educational and governmental facilities, trains and water transport, theatres, cinemas, restaurants, pubs and bars.

### **Policy and Interventions**

National tobacco action plan, specific targets on tobacco in government policy, interventions to prevent initiation of tobacco use and to protect non-smokers, NGO's active in tobacco control, celebration of annual World No Tobacco Day exist, and there is national coordinating body for tobacco control. The government has recently accepted a ten-year public health program, "Béla Johan National Program for the Decade of Health", one important program of which, is the Tobacco Control Program, which focuses mainly on prevention in kindergartens and elementary schools.

There are many various facilities that support smoking cessation: consulting hours in 130 settlements where patients can get professional advice and help, several cessation clinics and help lines, etc. Pharmacotherapies for cessation are available and also price-incentive and reduced cost for treatment.

#### **The Global Youth Tobacco Survey – objectives and goals**

In 1998 the WHO in collaboration with the US Centres for Disease Control and Prevention and UNICEF, began a project called Global Youth Tobacco Survey (GYTS) to enhance tobacco surveillance to young people. So far the survey has been completed in over 97 countries including six European in the WHO European region and Hungary with other 6 countries from the Central-Eastern European region joined to the Survey in the last year.

The GYTS provides a mechanism by which countries can monitor tobacco use among 13-15 year old young people and guide the implementation and evaluation of tobacco prevention and control programmes. It aims to understand and assess students' attitudes, knowledge and behaviours related to tobacco use and its health impact, including:

cessation, environmental tobacco smoke, media and advertising, minors' access and school curriculum.

The GYTS will attempt to address the following issues:

- Determine the level of tobacco use
- Estimate the age of initiation of cigarette use
- Estimate levels of susceptibility to become cigarette smokers
- Exposure to tobacco advertising
- Identify key intervening variables, such as attitudes and beliefs on behavioural norms with regard to tobacco use among young people which can be used in prevention programmes
- Assess the extent to which major prevention programmes are reaching school based populations and establish the subjective opinions of those populations regarding such interventions.

## **Methods**

### **Sampling**

The 2003 Hungary GYTS was a school-based survey with a two-stage cluster sample design to produce a nationally representative sample in seventh, eighth, ninth and tenth grades (i.e. grades which contain most of the students aged between 13 and 15).

The first-stage sampling frame consisted of all schools containing seventh, eighth, ninth and tenth grades. Schools were selected with probability proportional to school enrolment size.

The second sampling stage consisted of systematic equal probability sampling (with a random start) of classes from each school that participated in the survey. All classes in the selected schools were included in the sampling frame. All students in the selected classes were eligible to participate in the survey.

There was a regional stratification for sampling as well: 20 schools were selected both from Budapest (1597 students) and from other urban region (1896 students), and 27 schools were selected from the rural region (1647 students). Altogether 5140 students were sampled from 67 schools. Overall response rates can be seen in the table below:

	<b>All schools</b>	<b>Budapest</b>	<b>Other Urban</b>	<b>Rural</b>
<b>Schools (%)</b>	98.5%	95.0%	100.0 %	100.0 %
<b>Schools (N)</b>	66	19	20	27
<b>Students (%)</b>	87.2%	86.7%	86.4%	88.8%
<b>Students (N)</b>	4484	1384	1638	1462

### **Weighting**

A weight has been associated with each record to reflect the likelihood of sampling each student and to reduce bias by compensating for different patterns of nonresponse. The weight used for estimation is given by:

$$W = W_1 * W_2 * f_1 * f_2 * f_3 * f_4$$

$W_1$  = the inverse of the probability of selecting the school

$W_2$  = the inverse of the probability of selecting the classroom within the school

$f_1$  = a school-level non-response adjustment factor calculated by school size category (small, medium, large)

$f_2$  = a class adjustment factor calculated by school

$f_3$  = a student-level nonresponse adjustment factor calculated by class

$f_4$  = a post stratification adjustment factor calculated by gender and grade.

The weighted results can be used to make important inferences concerning tobacco use risk behaviours of students in seventh, eighth, ninth and tenth grade.

### **Questionnaire**

The questionnaire consists of two main parts: 89 core questions (developed especially for the European region), and 8 optional questions on the possible background factors associated with tobacco use. Core questions focus on seven topics:

- prevalence
- minor's access
- cessation
- knowledge and attitudes
- tobacco-related school-curriculum
- media and advertising
- environmental tobacco smoke.

The questionnaire was translated from English into Hungarian and then independently retranslated into English in order to insure the linguistic quality.

### **Data Collection and data entering**

The National Centre of Health Promotion and Development coordinated the survey. Before data collection all selected schools received a request letter for their permission to implement the survey. Enclosed the schools got letter of support from the Ministry of Education, a short description on the survey purposes and procedures emphasising the assurance of privacy (voluntary and anonymous participation), and information letter for the parents.

Eight survey administrators were trained for the conduction of data collection during a one-day training. They received written instructions too, and all of the documents, needed for fieldwork. Data collection was administered in the school-settings (in the classrooms) using the anonymous self-reported questionnaire. Students recorded their responses directly on an Answer Sheet using a special pencil.

Data collection was administered in February 2003.

All documentations were sent to the National Centre of Health Promotion and Development. After controlling of completed scannable answer sheets as well as controlling and completing of other documentations on data collection, all of these were packed and sent to the CDC. Data scanning and data-file compilation were executed in the CDC.

### Statistical Analysis

The Epi Info 2002 statistical software package was used for the complex sampling design and weighting factors in the data set, to calculate standard errors and prevalence estimates.

Percentage prevalences are described in this report giving the 95% confidence intervals (CI) for the estimates. In the result text statistically significant differences are mentioned. Statistical differences is determined by comparing the range of the 95% CI-s for the estimates. If the ranges for the 95%CI do not overlap then the differences are statistically significant.

### Results

#### Prevalences

Table 1A: Percent of students who smoke cigarettes, HUNGARY, GYTS, 2003

Category	Ever Smoked Cigarettes, Even One or Two Puffs	Age of Initiation <10, Ever Smoked Cigarettes	Current Use	Current Cigarette Smokers who Smoke:	
			Cigarettes -- Total	Hand-rolled cigarettes	Manufactured cigarettes
<b>Total</b>	70.7 (± 3.2)	17.7 (± 2.6)	33.5 (±	12.7 (± 2.5)	96.0 (± 1.2)
<b>Sex</b>					
Boy	71.4 (± 3.6)	20.4 (± 3.4)	33.1 (±	14.3 (± 3.2)	95.1 (± 1.9)
Girl	69.5 (± 4.0)	14.6 (± 2.7)	32.7 (±	11.1 (± 3.7)	96.5 (± 1.5)
<b>Region</b>					
Budapest	71.1 (± 6.6)	16.2 (± 4.2)	37.9 (±	17.0 (± 3.0)	96.6 (± 1.8)
Other Urban	72.0 (± 3.8)	16.3 (± 3.2)	34.3 (±	9.9 (± 3.5)	96.0 (± 1.6)
Rural	62.3 (± 11.6)	25.1 (± 7.2)	25.9 (±	20.3 (± 5.1)	94.9 (± 3.2)

Over 7 in 10 (70.7%) of students had ever smoked cigarettes; and 17.7% of ever smokers initiated smoking before age ten (Table 1A). About one-third (33.5%) of students are current cigarette smokers (they smoked cigarette in the past 30 days). Over one in ten (12.7%) current smokers used hand-rolled cigarettes and 96.0% used manufactured cigarettes.

Significantly more rural (20.3%) and Budapest (17.0%) current smokers used hand-rolled cigarettes than other urban students (9.9%).

Table 1B: Percent of students who use other tobacco products, HUNGARY, GYTS, 2003

Category	Current use
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	Other Tobacco Products – Total	Cigars	Pipe	Any Current Tobacco Use – Cigarettes + Other
<b>Total</b>	7.1 ( $\pm$ 1.4)	6.2 ( $\pm$ 1.2)	2.1 ( $\pm$ 0.8)	33.9 ( $\pm$ 3.1)
<b>Sex</b>				
Boy	11.1 ( $\pm$ 2.2)	10.2 ( $\pm$ 2.0)	2.7 ( $\pm$ 1.2)	34.3 ( $\pm$ 4.6)
Girl	3.3 ( $\pm$ 1.0)	2.5 ( $\pm$ 0.7)	1.4 ( $\pm$ 0.7)	32.5 ( $\pm$ 3.8)
<b>Region</b>				
Budapest	11.9 ( $\pm$ 3.3)	9.9 ( $\pm$ 2.6)	4.4 ( $\pm$ 2.5)	40.0 ( $\pm$ 6.3)
Other Urban	6.2 ( $\pm$ 1.8)	5.6 ( $\pm$ 1.5)	1.5 ( $\pm$ 1.0)	34.4 ( $\pm$ 4.0)
Rural	5.5 ( $\pm$ 1.8)	4.6 ( $\pm$ 1.8)	2.1 ( $\pm$ 0.8)	25.9 ( $\pm$ 8.0)

Less than 1 in 10 (7.1%) students used other tobacco products than cigarette. Most of these students (6.2%) used cigars and 2.1% used pipe (Table 1B). Altogether over one-third (33.9%) of students are current users of cigarette and other kinds of tobacco product. Significantly more boys used other tobacco products (11.1%) and cigars (10.2%) than girls (3.3% and 2.5%). Moreover in Budapest the proportion of other tobacco product (11.9%) and cigar users (9.9%) is significantly higher compared to other urban (6.2% and 5.6%) and rural area (5.5% and 4.6%).

Table 1C: Percent of students reporting smoking dependency and susceptibility, HUNGARY, GYTS, 2003

Category	Percent of current smokers who always have or feel like having a cigarette first thing in the morning	Percent of never smokers likely to initiate smoking during the next year
<b>Total</b>	17.4 ( $\pm$ 3.9)	22.1 ( $\pm$ 2.5)
<b>Sex</b>		
Boy	18.1 ( $\pm$ 4.0)	15.0 ( $\pm$ 3.6)
Girl	16.1 ( $\pm$ 6.7)	27.9 ( $\pm$ 3.6)
<b>Region</b>		
Budapest	18.7 ( $\pm$ 4.4)	25.7 ( $\pm$ 4.4)
Other Urban	16.9 ( $\pm$ 5.5)	22.0 ( $\pm$ 3.3)
Rural	17.8 ( $\pm$ 8.9)	19.6 ( $\pm$ 5.7)

Almost every fifth (17.4%) of current smokers are addicted and more than one in five (22.1%) of never smokers are susceptible for initiating of smoking in the next year (Table 1C). Almost twice as many girls who never smoked (27.9%) are ready to initiate smoking than never smoker boys (15%) in the next year.

### School Curriculum

Table 2: School Curriculum, HUNGARY, GYTS, 2003

Category	During past school year, percent had class where taught dangers of smoking	During past school year, percent had class where discussed reasons why people their age smoke	During past school year, percent had class where taught about the effects of smoking
<b>Total</b>	48.7 ( $\pm$ 6.5)	38.6 ( $\pm$ 6.4)	41.2 ( $\pm$ 6.3)
<b>Sex</b>			
Boy	46.0 ( $\pm$ 6.1)	35.6 ( $\pm$ 6.3)	40.8 ( $\pm$ 5.6)
Girl	51.2 ( $\pm$ 7.6)	41.3 ( $\pm$ 7.1)	41.8 ( $\pm$ 7.5)
<b>Region</b>			
Budapest	41.2 ( $\pm$ 6.1)	32.5 ( $\pm$ 6.7)	35.9 ( $\pm$ 6.5)
Other Urban	49.1 ( $\pm$ 9.7)	39.3 ( $\pm$ 9.7)	41.0 ( $\pm$ 9.3)
Rural	54.7 ( $\pm$ 5.5)	42.2 ( $\pm$ 4.2)	47.2 ( $\pm$ 6.4)

Less than half (48.7%) of the students were taught in the school about the dangers of smoking during the last school-year (Table 2), and only 38.6% of them reported that they discussed reasons of teenage smoking in the class during the last year. Similarly 41.2% reported discussions about the effects of smoking in the class.

Significantly higher proportion of rural students (54.7%) than Budapest students (41.2%) were taught the dangers of smoking in the school.

### Cessation

Table 3: Cessation, HUNGARY, GYTS, 2003

Category	Current Smokers		
	Percent desire to stop	Percent tried to stop this year	Received Help/Advice to Stop Smoking
<b>Total</b>	36.7 ( $\pm$ 3.4)	64.4 ( $\pm$ 4.0)	56.6 ( $\pm$ 2.4)
<b>Sex</b>			
Boy	40.1 ( $\pm$ 4.9)	61.6 ( $\pm$ 5.6)	40.1 ( $\pm$ 4.9)
Girl	33.6 ( $\pm$ 4.8)	65.5 ( $\pm$ 6.4)	33.6 ( $\pm$ 4.8)
<b>Region</b>			
Budapest	31.1 ( $\pm$ 2.7)	59.3 ( $\pm$ 5.2)	50.1 ( $\pm$ 3.8)
Other urban			
Rural	42.9 ( $\pm$ 5.1)	69.5 ( $\pm$ 8.0)	62.9 ( $\pm$ 4.6)

Over one-third (36.7%) of current smokers have the intention to stop smoking, while almost two-third (64.4%) of them tried to quit this year (Table 3). Slightly more than half (56.6%) of current smokers received help or advice to stop smoking.

Significantly higher proportion of rural smokers (42.9%) than Budapest smokers (31.1%) want to stop smoking, and also significantly higher percent of rural smokers (62.9%) received help or advice for stopping smoking than Budapest smokers (50.1%).

### Environmental Tobacco Smoke

Table 4A: Environmental Tobacco Smoke, HUNGARY, GYTS, 2003

Category	Exposed to smoke in their home		Exposed to smoke from father in their home		Exposed to smoke from mother in their home	
	Never Smokers	Current Smokers	Never Smokers	Current Smokers	Never Smokers	Current Smokers
<b>Total</b>	75.9 (± 2.5)	91.6 (± 1.9)	42.6 (± 3.0)	57.9 (± 3.7)	31.5 (± 3.0)	46.4 (± 3.6)
<b>Sex</b>						
Boy	72.0 (± 4.8)	92.2 (± 1.9)	43.0 (± 5.7)	58.4 (± 4.9)	31.3 (± 5.7)	45.4 (± 4.8)
Girl	79.1 (± 3.2)	91.5 (± 2.5)	42.1 (± 3.4)	57.5 (± 6.3)	31.0 (± 2.5)	47.0 (± 6.1)
<b>Region</b>						
Budapest	70.8 (± 7.0)	89.9 (± 2.3)	37.0 (± 8.9)	54.7 (± 7.1)	30.8 (± 8.8)	47.3 (± 5.1)
Other urban	74.8 (± 3.1)	91.2 (± 2.8)	41.8 (± 3.8)	57.3 (± 4.6)	29.8 (± 3.7)	44.3 (± 5.1)
Rural	83.0 (± 4.6)	96.2 (± 1.9)	49.0 (± 3.9)	66.1 (± 8.8)	36.7 (± 4.8)	55.6 (± 3.7)

Category	Exposed to smoke from sister/brother in their home		Exposed to smoke from best friend in their home		Exposed to smoke from others in their home	
	Never Smokers	Current Smokers	Never Smokers	Current Smokers	Never Smokers	Current Smokers
<b>Total</b>	12.9 (± 3.3)	41.6 (± 3.8)	9.59 (± 2.0)	52.5 (± 5.4)	64.6 (± 3.5)	78.1 (± 3.5)
<b>Sex</b>						
Boy	12.5 (± 4.1)	38.9 (± 7.4)	9.2 (± 2.9)	52.7 (± 5.8)	59.2 (± 6.2)	76.4 (± 3.5)
Girl	13.1 (± 3.3)	43.7 (± 6.4)	9.3 (± 3.0)	51.1 (± 7.6)	68.8 (± 4.3)	79.9 (± 5.3)
<b>Region</b>						
Budapest	14.1 (± 5.3)	43.1 (± 5.2)	9.3 (± 3.6)	53.2 (± 5.9)	60.4 (± 6.7)	75.9 (± 4.1)
Other urban	2.5 (± 5.0)	41.0 (± 5.0)	8.9 (± 2.7)	52.1 (± 7.7)	62.9 (± 5.2)	77.2 (± 4.8)
Rural	12.9 (± 3.5)	42.2 (± 9.9)	11.3 (± 4.3)	53.2 (± 8.8)	72.3 (± 5.2)	86.3 (± 6.8)

In general significantly higher proportion of current smokers (96.1%) are exposed to any other person's smoking than never smokers (75.9%) (Table 4A). Moreover, a significantly higher percentage of both never (83.0%) and current smokers (96.2%) in the rural area are exposed to smoke in their home than those living in the urban area (including Budapest).

Over 4 in 10 (42.6%) of never smokers while almost 6 in 10 (57.9%) current smokers are exposed to their father's smoking in their home. These percentages are more than 10% lower in the case of mother (31.5% for never smokers and 46.4% for current smokers). Significantly higher percentage of rural current smokers (55.6%) is exposed to their mother's smoke than other than Budapest urban ones (44.3%).

Over three times more current smoker students (41.6%) are exposed to the smoke from their sibling(s) in their home than never smokers (12.9%). The difference is more striking in the case of best friend: over five times more current smokers (52.5%) reported that their best friends smoked in their presence than never smokers (9.5%). Almost two-third (64.6%) of never smokers and more than three-fourth (78.1%) of current smokers are exposed to other persons' smoke in their home.

Table 4B: Environmental Tobacco Smoke, HUNGARY, GYTS, 2003

Category	Exposed to smoke from others in public places		Percent think smoking should be banned from public places		Definitely think smoke from others is harmful to them	
	Never Smokers	Current Smokers	Never Smokers	Current Smokers	Never Smokers	Current Smoker
<b>Total</b>	89.2 (± 2.8)	96.9 (± 1.3)	90.0 (± 2.2)	31.6 (± 2.9)	67.6 (± 3.7)	54.0 (± 3.6)
<b>Sex</b>						
Boy	88.9 (± 3.5)	96.7 (± 1.8)	89.3 (± 3.2)	36.7 (± 3.9)	65.1 (± 5.1)	53.0 (± 4.3)
Girl	89.6 (± 3.7)	97.8 (± 1.6)	90.8 (± 2.7)	27.8 (± 5.3)	69.4 (± 4.5)	54.2 (± 5.6)
<b>Region</b>						
Budapest	90.5 (± 1.8)	98.1 (± 1.3)	87.1 (± 3.8)	27.5 (± 5.4)	63.2 (± 7.7)	47.7 (± 6.4)
Other Urban	90.7 (± 3.5)	97.1 (± 1.7)	90.4 (± 3.4)	31.9 (± 3.6)	70.8 (± 5.4)	57.1 (± 4.8)
Rural	84.1 (± 8.8)	94.0 (± 3.8)	91.4 (± 1.9)	36.6 (± 9.6)	62.4 (± 3.5)	48.0 (± 13.1)

Almost every smoker (96.9%) and almost 9 in 10 (89.2%) never smokers are exposed to others' smoking in public places (Table 4B); and this difference is significant. Also 9 in 10 (90.0%) never smokers think that smoking in public places should be banned, while this proportion is 31.6% in current smokers. This difference is also significant.

Over half (54.0%) of current smokers and significantly higher proportion (67.6%) of never smokers think that environmental tobacco smoke is harmful for them.

### Knowledge and Attitudes

Table 5: Knowledge and Attitudes, HUNGARY, GYTS, 2003

Category	Think boys who smoke have more friends		Think girls who smoke have more friends	
	Never Smokers	Current Smokers	Never Smokers	Current Smokers
<b>Total</b>	23.0 (± 3.5)	21.2 (± 3.7)	17.5 (± 3.3)	15.5 (± 3.4)
<b>Sex</b>				
Boy	21.5 (± 5.4)	18.0 (± 5.0)	15.4 (± 4.3)	13.6 (± 4.6)
Girl	24.0 (± 3.8)	23.3 (± 3.9)	19.3 (± 4.0)	16.8 (± 3.4)
<b>Region</b>				
Budapest	22.4 (± 6.5)	14.6 (± 5.5)	17.5 (± 5.2)	14.3 (± 4.4)
Other Urban	24.9 (± 4.7)	22.3 (± 5.4)	17.8 (± 5.1)	14.6 (± 4.7)
Rural	18.2 (± 7.7)	25.8 (± 5.3)	17.0 (± 3.4)	21.3 (± 7.0)

Category	Think smoking makes boys look more attractive		Think smoking makes girls look more attractive	
	Never Smokers	Current Smokers	Never Smokers	Current Smokers
<b>Total</b>	5.2 (± 1.0)	18.0 (± 2.9)	3.8 (± 1.0)	11.6(± 2.4)
<b>Sex</b>				
Boy	8.4 (± 1.5)	17.5 (± 4.9)	4.9 (± 2.0)	11.0 (± 3.3)
Girl	2.3 (± 1.0)	17.9 (± 4.9)	2.5 (± 1.3)	11.2 (± 2.5)
<b>Region</b>				
Budapest	5.9 (± 3.3)	11.0 (± 2.2)	3.5 (± 2.5)	10.8 (± 2.3)
Other Urban	5.1 (± 1.0)	19.1(± 4.3)	4.1 (± 1.3)	0.7 (± 3.4)
Rural	5.0 (± 2.2)	23.1 (± 4.4)	3.5 (± 1.6)	16.9 (± 4.7)

Over 1 in 5 of both never smokers (23.0%) and current smokers (21.2%) think that boys who smoke have more friends (Table 5). The pattern is similar in the case of girls who smoke (17.5% for never smokers and 15.5% for current smokers).

However, there are significant differences between never and current smokers in thinking of attractiveness of a boy or girl who smokes. Over three times more (18.0%) current smokers than never smokers (5.2%) think that smoking makes boys more attractive. The figures are a little bit smaller concerning girls: 3.8% of never smokers while 11.6% of current smokers think that smoking makes girls' look more attractive.

Significantly higher percentage of rural (25.8%) than Budapest (14.6%) smokers think that boys who smoke have more friends. In Budapest a significantly lower proportion of current smokers (11.0%) think that smoking makes boys' look more attractive than other urban (19.1%) and rural (23.1%) current smokers.

## Media and Advertising

Table 6A: Media and Advertising, HUNGARY, GYTS, 2003

Category	Percent Saw Anti-Smoking Media Messages on Television	Percent Heard Anti-Smoking Media Messages on Radio	Percent Saw Anti-Smoking Media Messages on Billboards	Percent Saw Anti-Smoking Media Messages on Posters
<b>Total</b>	59.8 (± 2.4)	36.2 (± 3.2)	51.6 (± 3.0)	44.7 (± 2.4)
<b>Sex</b>				
Boy	60.4 (± 3.4)	40.0 (± 3.8)	50.2 (± 2.7)	44.5 (± 2.0)
Girl	58.9 (± 2.9)	32.3 (± 3.8)	52.6 (± 3.7)	44.6 (± 3.2)
<b>Region</b>				
Budapest	55.2 (± 4.3)	32.3 (± 5.5)	54.9 (± 3.9)	49.2 (± 2.7)
Other Urban	59.4 (± 3.2)	34.9 (± 4.3)	51.5 (± 4.4)	43.8 (± 3.3)

Rural	65.8 (± 4.7)	44.6 (± 4.3)	48.6 (± 4.4)	43.2 (± 5.2)
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Category	Percent Saw Anti-Smoking Media Messages in Newspapers or Magazines	Percent Saw Anti-Smoking Media Messages at the Cinema	Percent Saw Anti-Smoking Media Messages at Sports Events, Fairs, Concerts or Community Events
<b>Total</b>	55.8 (± 2.5)	40.8 (± 3.4)	57.2 (± 3.0)
<b>Sex</b>			
Boy	52.8 (± 2.4)	40.3 (± 4.6)	56.1 (± 3.2)
Girl	58.7 (± 3.4)	40.8 (± 3.9)	58.0 (± 4.0)
<b>Region</b>			
Budapest	51.9 (± 2.9)	31.8 (± 4.3)	56.7 (± 2.9)
Other Urban	56.8 (± 3.7)	40.9 (± 4.6)	56.2 (± 4.2)
Rural	56.7 (± 3.4)	49.4 (± 8.7)	61.2 (± 4.8)

Almost 6 in 10 (59.8%) of students saw anti-smoking messages on the TV, while almost 4 in 10 (36.2%) of them heard this kind of message on the radio (Table 6A). A little bit – but significantly – more of students saw anti-smoking messages on billboards (51.6%) than on posters (44.7%).

More than half of students saw such messages in newspapers and magazines (55.8%) and social events (57.2%). More than 4 in 10 (40.8%) of students saw messages at cinemas. Significant differences are between boys (40.0%) and girls (32.3%) in hearing anti-smoking messages on the radio, and in seeing such messages in newspapers (boys: 52.8% and girls: 58.7%).

Significantly higher percentage of rural students saw messages on the TV (65.8%) and at cinemas (49.4%) and heard messages on the radio (44.6 %) than Budapest students (55.2% for the TV, 31.8% for cinemas and 32.3% for the radio). There are also significant differences in the case of radio between rural and other than Budapest urban (34.9%) students, and in the case of cinema between Budapest and other urban (40.9%) students.

Table 6B: Media and Advertising, HUNGARY, GYTS, 2003

Category	Percent Saw Pro-Tobacco Messages on Television	Percent Saw Pro-Tobacco Messages on Billboards	Percent Saw Pro-Tobacco Messages on Newspapers/Magazines
<b>Total</b>	85.8 (± 1.1)	70.5 (± 2.9)	77.7 (± 1.9)
<b>Sex</b>			
Boy	87.0 (± 2.0)	69.4 (± 3.0)	74.6 (± 2.6)
Girl	85.0 (± 1.8)	70.9 (± 4.0)	79.8 (± 2.0)

<b>Region</b>			
Budapest	85.9 ( $\pm$ 2.3)	80.7 ( $\pm$ 3.7)	78.4 ( $\pm$ 2.2)
Other Urban	85.9 ( $\pm$ 1.6)	71.7 ( $\pm$ 2.1)	78.3 ( $\pm$ 2.7)
Rural	85.5 ( $\pm$ 1.6)	56.2 ( $\pm$ 6.4)	74.8 ( $\pm$ 2.4)

Category	Percent Saw Pro-Tobacco Messages at Sporting Events	Percent Saw Pro-Tobacco Messages at Cinema	Percent Saw Pro-Tobacco Messages at Community Events /Social Gatherings
<b>Total</b>	68.8 ( $\pm$ 2.3)	69.0 ( $\pm$ 1.6)	63.9 ( $\pm$ 1.6)
<b>Sex</b>			
Boy	71.7 ( $\pm$ 2.5)	71.7 ( $\pm$ 3.2)	63.7 ( $\pm$ 2.2)
Girl	65.7 ( $\pm$ 3.6)	66.4 ( $\pm$ 2.6)	63.4 ( $\pm$ 2.2)
<b>Region</b>			
Budapest	71.2 ( $\pm$ 4.2)	74.6 ( $\pm$ 3.3)	73.1 ( $\pm$ 3.5)
Other Urban	68.5 ( $\pm$ 3.1)	67.9 ( $\pm$ 2.0)	67.9 ( $\pm$ 2.0)
Rural	67.6 ( $\pm$ 3.6)	67.3 ( $\pm$ 4.5)	67.3 ( $\pm$ 4.5)

Over 8 in 10 (85.8%) of students saw pro-tobacco messages on the TV (Table 6B). This proportion is a little bit less in the case of newspapers / magazines (77.7%) and billboards (70.5%). More than two-third (68.8%) saw pro-tobacco messages at sporting events and almost two-third (63.9%) of them saw such messages at social gatherings. The lowest proportion was 40.8% in the case of cinema.

Significantly higher percent of girls (79.8%) saw this kind of message in magazines and newspapers than boys (74.6%). There are also significant differences among Budapest (80.7%), other urban (71.7%) and rural (56.2%) students in seeing pro-tobacco messages.

Table 6C: Media and Advertising, HUNGARY, GYTS, 2003

Category	Percent Who Had Object With a Cigarette Brand Logo On It		Percent Offered a Free Cigarettes by a Tobacco Company	
	Never Smokers	Current Smokers	Never Smokers	Current Smokers
<b>Total</b>	15.8 ( $\pm$ 2.6)	38.6 ( $\pm$ 2.8)	3.3 ( $\pm$ 1.1)	11.3 ( $\pm$ 1.2)
<b>Sex</b>				
Boy	19.4 ( $\pm$ 3.8)	42.0 ( $\pm$ 5.2)	3.7 ( $\pm$ 2.2)	14.7 ( $\pm$ 3.0)
Girl	13.0 ( $\pm$ 3.4)	36.5 ( $\pm$ 3.5)	2.7 ( $\pm$ 1.0)	8.0 ( $\pm$ 1.9)
<b>Region</b>				
Budapest	16.0 ( $\pm$ 2.9)	40.3 ( $\pm$ 5.1)	2.9 ( $\pm$ 1.2)	15.6 ( $\pm$ 2.4)
Other Urban	16.6 ( $\pm$ 4.1)	37.2 ( $\pm$ 3.7)	3.4 ( $\pm$ 1.6)	9.2 ( $\pm$ 11.2)
Rural	13.5 ( $\pm$ 3.6)	43.4 ( $\pm$ 5.9)	3.6 ( $\pm$ 2.3)	15.7 ( $\pm$ 3.1)



Significantly higher percentage (38.6%) of current smokers has an object with a cigarette brand logo on it than never smokers (15.8%) have (Table 6C). Similarly significantly higher percent (11.3%) of current smokers were offered a free cigarette by a tobacco company than never smokers (3.3%). Moreover significantly higher ratio of smoker boys (14.7%) was offered a free cigarette than smoker girls (8.0%).

## Access and Availability

Table 7: Access and Availability, HUNGARY, GYTS, 2003

Category	Percent Current Smokers who Usually Smoke at Home	Percent Current Smokers who Purchased Cigarettes in a Store	Percent Current Smokers Who Bought Cigarettes in a Store Who Were Not Refused Because of Their Age
<b>Total</b>	11.2 ( $\pm$ 2.0)	65.3 ( $\pm$ 2.8)	76.2 ( $\pm$ 4.6)
<b>Sex</b>			
Boy	12.4 ( $\pm$ 2.7)	71.0 ( $\pm$ 3.3)	72.0 ( $\pm$ 5.8)
Girl	10.6 ( $\pm$ 3.1)	61.1 ( $\pm$ 4.6)	81.0 ( $\pm$ 5.6)
<b>Region</b>			
Budapest	10.0 ( $\pm$ 4.5)	65.7 ( $\pm$ 3.4)	75.8 ( $\pm$ 4.4)
Other Urban	11.1 ( $\pm$ 2.5)	66.5 ( $\pm$ 3.8)	78.7 ( $\pm$ 5.8)
Rural	13.8 ( $\pm$ 3.2)	58.8 ( $\pm$ 9.4)	61.1 ( $\pm$ 16.1)

Over 1 in 10 (11.2%) of current smokers usually smoke at home (Table 7). Almost two-third (65.3%) of them bought cigarette in a store, while more than three-fourth (76.2%) of them reported, that they were never refused because of their age, when they bought cigarette.

Almost 10% higher proportion of smoker boys who smoke (71.0%) bought cigarettes in a store than girls who smoke (61.1%), which is a significant difference.

## Discussion

### Prevalence

More than two-third of 13-16-year-old Hungarian teenagers have already tried with cigarette smoking and one-third of them have remained current smoker, which are extremely high proportions. These data are consistent with the previous studies (16, 18, 19) and show also that the increasing trend in tobacco use among young people in the last decade (16) have not changed about.

Almost one-fifth of ever smoker children tried smoking firstly at very young age. It also has a considerable health impact, because starting to smoke at younger ages increases the

risk of death from a smoking-related cause, and lowers the age at which death is likely to occur.

Almost one-fifth of current smokers are at extremely high risk for later tobacco-related diseases and death, because they are addicted. In addition almost one-fourth of never smokers are potential smokers. Considering that the percentage of susceptible girls is significantly higher than that of boys and that smoking prevalence among girls has increased more steeply than among boys (16), it can be concluded that girls are at higher risk than boys.

Though the most popular tobacco use form is the manufactured cigarette, about every fifth smoker adolescent use hand-rolled cigarettes in Budapest and the rural area (while consuming of hand-rolled cigarette is much lower in the other urban area). The reason for this regional difference can be on the one hand the easier availability of rough tobacco in countryside where tobacco is grown. On the other hand availability of tobacco is easier in Budapest too, where many special tobacco stores can be found.

Few of current smoker students use other than cigarette tobacco forms: firstly cigars and in a very low ratio pipe. These kinds of tobacco consumers are mainly the boys and Budapest children (here again the availability can have a role).

These data assign the obvious task for the future: to reduce smoking prevalences among young people. The question is how. To answer this question we need to know more about young people smoking habits, knowledge, attitudes and their exposure to environmental smoke and media messages. The GYTS reveals these aspects as well.

### **Cessation**

Though the proportion of current and addicted smokers is high among young people, more than one-third of current smokers want to quit and almost two-third of them tried to stop smoking in the last year. In contrast, only slightly more than half of them received help to quit smoking. Perhaps they keep in secret that they smoke and they have no information on where and how they can get help and advice for stopping. These indicators are worse in the capital than in the rural area.

### **School Curriculum**

School-based tobacco prevention education is a unique opportunity for prevention, because it attains all children. In general, less than half of the Hungarian students were taught or discussed about tobacco use in the class during the last school year, though this topic is involved in the school curriculum related to health promotion and development from the fourth elementary grade. This curriculum seems to be implemented better in the rural area than in Budapest: the most students informed about smoking in the school were in the rural region, while the least students were in the capital.

### **Environmental Tobacco Smoke (ETS)**

Whilst not only direct smoking but also ETS has large health impact, it is important to measure the extent to which young people are exposed to others' tobacco smoke and to get acquainted their opinion on ETS. Our results show that extremely high percentage of students (even non-smokers) is exposed to others' smoke both at home and in public places. In addition current smokers' relatives and other people in their environment smoke in higher proportion than those of never smokers. Previous studies have shown

that those children whose parents smoke are at higher risk to be a smoker (20). The most striking differences are between never current smokers' best friend, and siblings, which can denote the importance of peer influence too (20, 21, 22).

Though significantly higher percentage of never smokers is aware of the harmful effects of ETS and also significantly higher ratio of them wants to be protected from ETS in public places, these proportions are not negligible among current smokers either. Accordingly banning smoking at public places may have impact on smokers.

### **Knowledge and attitudes**

Adolescents often concentrate on the short-term benefits of tobacco use neglecting its harmful effects. Smoking is mainly a social activity for them, a way of making contact with peers (including peers of the opposite sex). Moreover media also can form youth's tobacco-related attitudes into positive direction. Thus students with positive attitude toward smoking are susceptible to initiate smoking.

Both current smokers and never smokers think that smoking give more advantages for boys than girls. However, much more current smokers (especially in the rural area) think that smoking makes better looks.

### **Media and Advertising**

Children and adolescents are often affected by advertising and other media messages. Thus mass media have great responsibility in mediating both advertisement of tobacco use and anti-smoking messages.

Our results show that young people can meet significantly more frequently pro-smoking (which is an indirect advertising) than anti-smoking messages from all of the sources asked (these frequency data are high in absolute sense too). There are some gender and regional differences in reporting to see such messages. These differences are due to the gender differences in the preference of use of certain media channels and due to the regional differences in the availability of different sources.

Though more than twice as many current smokers have an object with cigarette brand logo than never smokers, we also have to attend to the latter ones, because they are potential smokers. More than one in ten current smokers have already been offered free cigarette by representatives of tobacco companies in spite of the complete ban by the law for distribution of free tobacco products.

### **Access and Availability**

Our data show that the majority of current smokers can get their cigarettes by buying in a store and three-fourth of them have never had problem with buying them because of their age, albeit selling of tobacco products to minors is prohibited. Purchase of cigarettes is proper to higher percentage of boys than girls. Girls probably get their cigarettes more often from social sources (e.g. borrow them from friends).

### **Conclusions and Recommendations**

Our findings indicate high smoking prevalences among young people in Hungary. So there is an urgent need to reduce these percentages, otherwise the high morbidity and mortality ratios due to tobacco use can even increase in the future.

To reduce prevalences among young people more comprehensive social actions are needed. The focus must be on prevention, but we would like to draw attention to the importance of cessation, because these data have revealed unambiguously its necessity. Prevention programs and policy have to be improved and disseminated in a broader field, because a huge proportion of young people has already tried with smoking and another considerable proportion of them is susceptible, so they are potential regular smokers. Thus existing tobacco control programmes, campaigns must be developed further to be more effective and/or new effective programmes are needed targeting children at the youngest possible age. Those programmes whose efficiency has proven are needed to be disseminated at national level. Tobacco control (including prevention) programmes should deal with all of the above detailed topics: prevalence, access, cessation, school education, knowledge and attitudes, ETS and media.

To achieve the above mentioned goals there are some recommendations in details below:

- It can be necessary to make some changes in the legislation (e.g. more restriction in public places for reducing ETS, better regulation of media for better forming of attitudes toward smoking), but it is even more important that the existing laws have to be complied (e.g. the banning of the sale of tobacco products to minors). The authorities should pay more attention to this problem. For instance education of merchants can be useful in reducing illegal sales of tobacco to minors. Some economical actions also will happen with the entering into the EU (e.g. the increase of taxes of tobacco products), which may have positive impacts on tobacco prevention.
- Schools have an essential role in the prevention, but even in the cessation. They are ideal settings for health education programmes on smoking. Teaching on smoking and the dangers of it are the part of the curriculum, and we have to achieve that all of our children will be taught and well informed. Hence a considerable proportion of never smoker students is susceptible to start smoking it would provide a unique possibility for the prevention of smoking. Moreover prevention has to be started in the first elementary classes, because our data showed that significant percentage of teenagers tried smoking firstly during this period.
- Peer education also can have an important role because peer group influence is dominant in adolescents' social relations. A well-trained peer educator can be especially authentic for young people.
- It would be necessary to call parents' and teachers' attention to the importance of well-organized leisure time spending. It has a general protective role regarding risk behaviours.
- Prevention and control programs must pay special attention to environmental tobacco smoking to make teenagers (and not only them but the parents, relatives, etc.) aware of the harmful effects of it.

- Further investigations are needed to reveal the causes of gender difference in the susceptibility for smoking and improve preventive programs and policy in a special attention regarding girls (e.g. focusing on special health effects of smoking on the pregnancy and baby) because our data indicate that they are at higher risk. Moreover previous studies showed that prevalences had increased more rapidly among girls than among boys.
- There is an urgent need to develop and improve effective cessation programs too, because there is a demand for this among teenager smokers. Many regular smokers intend to quit, many of them have already tried it unsuccessfully. Further investigations also need to reveal that what kind of helps, advices are provided to those who want to stop smoking. It is necessary to establish regional and/or local professional counselling ambulances (e.g. in the schools) assuring confidentiality and privacy.

Finally it is recommended that regular surveys also should be done to monitor the situation and the effectiveness of tobacco control and prevention programs, campaigns and actions. Furthermore we have to be aware that the practical implementation of research findings (even those outwardly small relationships like that smoker students see smokers more attractive, and they consider smoking less harmful than their non-smoker peers) is essential for the effective prevention.

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